

The functional value of each wetland complex was qualitatively assessed during the field reconnaissance by completing a modified version of the WDNR form entitled "Rapid Assessment Methodology for Evaluating Wetland Functional Values." The quality of each wetland was rated (low, medium, or high) based on the observed characteristics of the wetlands.

Fifty-six wetlands were delineated during the field survey within the preferred highway corridor (see Exhibit 8). Six wetlands were delineated in the South Segment (I-90 to Fort Atkinson), 13 wetlands were delineated in the Central Segment (Fort Atkinson to Johnson Creek), and 37 wetlands were delineated in the North Segment (Johnson Creek to STH 60 East). The wetlands range in size from less than 1 acre (0.4 ha) to greater than 100 acres (40 ha).

Minor alignment shifts and other design changes for the Preferred Alternative that have been performed since the time of the field delineation have necessitated that wetland impacts in certain areas be estimated based on WDNR Wetland Inventory Maps. The tabulation of wetland impacts shown in Table 4.2.2.6 was obtained by comparing the limits of the preferred alternative corridor with field-delineated boundaries or WDNR Wetland Inventory boundaries of wetlands that fall within the corridor.

TABLE 4.2.2.6 WETLAND IMPACT SUMMARY STH 26 PREFERRED CORRIDOR					
Wetland ID	Wetland Type*	Estimated Total Wetland Size (Acres/Hectares)	Estimated Wetland Impact		Functional Value
			Acres	Hectares	
<b>South Segment</b>					
S3-1	M, RPF	80/32	2.75	1.11	Med-High
S3-3	SM, AB	20/8	1.38	0.56	Med-High
S3-4	M	10/4	0.50	0.20	Low-Med
S3-5	M	<5/2	0.47	0.19	Low-Med
S3-6	M	<5/2	0.17	0.07	Med-High
S3-7	M, SM	<5/2	0.80	0.32	Med-High
<b>South Segment Subtotal (Alternative S3)</b>			<b>6.07</b>	<b>2.46</b>	
<b>Central Segment</b>					
S2-1	M, RPF	10/4	2.01	0.81	Med-High
S2-2	M, RPF	10/4	0.77	0.31	Med-High
S2-3	M	>100/40	0.87	0.35	Low-Med
S2-5	M	>100/40	0.27	0.11	Low-Med
S2-6	RPE, RPF	>100/40	0.22	0.09	Med-High
S2-7	M	>100/40	1.43	0.58	Low-High
S2-8	M	80/32	4.61	1.86	Med-High
S2-9	M	20/8	0.31	0.13	Low-Med
S2-10	M	<5/2	0.25	0.10	Low-Med
S2-11	M	10/4	0.95	0.38	Med-High
S2-12	M, SS	10/4	3.29	1.33	Med-High
S2-13	M	<5/2	0.21	0.08	Med-High
<b>Central Segment Subtotal (Alternative C2(a))</b>			<b>15.19</b>	<b>6.15</b>	

**TABLE 4.2.2.6  
WETLAND IMPACT SUMMARY  
STH 26 PREFERRED CORRIDOR**

Wetland ID	Wetland Type*	Estimated Total Wetland Size (Acres/Hectares)	Estimated Wetland Impact Acres      Hectares	Functional Value	
North Segment					
S1-1	M	>100/40	0.43	0.17	Med-High
S1-2	M	<5/2	0.02	0.01	Low
S1-3	M, RPF	<5/2	0.04	0.02	Low-Med
S1-4	M	>100/40	0.54	0.22	Low-High
S1-5	M	<5/2	0.22	0.09	Low
S1-6	M	30/12	0.05	0.02	Low-Med
S1-7	M, SS	10/4	0.65	0.26	Low-Med
S1-8	M	<5/2	0.25	0.10	Low
S1-9	M	<5/2	0.03	0.01	Low-Med
S1-10	M	<5/2	0.02	0.01	Low-Med
S1-11	M	<5/2	0.07	0.03	Low-Med
S1-12	M	<5/2	0.09	0.04	Low
S1-13*	M, SS, RPF	100/40	4.61	1.87	Med-High
S1-14	SS	5/2	0.31	0.13	Low
S1-16	RPF	5/2	0.25	0.10	Low-Med
S1-17	M	<5/2	0.04	0.02	Low
S1-18*	M, RPF, WS	10/4	11.75	4.76	Med-High
S1-19	M, SS	<5/2	0.60	0.24	Low
S1-22	M, SS	<5/2	0.81	0.33	Low-Med
S1-23	M, RPF	50/20	1.24	0.50	Low-Med
S1-24	M, RPF	50/20	3.35	1.35	Low-Med
S1-25	RPF	<5/2	0.61	0.25	Low-Med
S1-26	M	<5/2	0.06	0.02	Low
S1-30*	M	40/16	0.38	0.15	Med-High
S1-32	M	<5/2	0.07	0.03	Low-Med
S1-33	M	100/40	1.97	0.79	Low-Med
S1-35	M	<5/2	0.02	0.01	Low-Med
S1-36	M	<5/2	0.17	0.07	Low-Med
S1-37	M	40/16	0.13	0.05	Low-Med
North Segment Subtotal (Alternative N1)			28.78	11.65	
TOTAL			50.04	20.25	

**\*NOTES:**

AB = Aquatic Bed, includes submerged aquatic beds less than 3 meters deep

M = Wet Meadow, includes wet/wet mesic prairie, sedge meadow, vernal pools.

RPE = Riparian emergent wetland, includes riparian wet and sedge meadows, bars, and mud flats.

RPF = Riparian wooded wetland, includes floodplain forest, bottomland hardwood forest, riparian shrub carr, and alder thicket.

SM = Shallow marsh, includes emergent aquatic.

SS = Shrub scrub, includes shrub carr and alder thicket.

WS = Wooded swamp, includes wet/wet mesic deciduous forests, white cedar swamps.

The wetlands range from low to high quality. In general, the lower quality wetlands are associated with small isolated areas that have been physically disturbed through hydrologic manipulation or domination by invasive vegetation (i.e., degraded sedge meadow dominated by *Phalaris* sp.). The higher quality wetlands are generally associated with large wetland complexes with high vegetation diversity and multiple functional values (i.e., bottomland hardwood forests associated with the Rock River and its tributaries).

### 4.2.3 Floodplains

This subsection describes potential impacts to floodplains that could occur as a result of this project. A floodplain is defined as lowland bordering a stream or river that is usually dry, but is subject to flooding. It is also described by the perimeter of the 100-year flood (1-percent) probable flood; that is, the area encompassed by a flood that has a 1 percent chance of occurring in any one period. The floodway of a stream is defined as the stream channel, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without any substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot (0.3 meters), provided that hazardous velocities are not produced. Hazardous velocity for a roadway structure relates to the scour potential through the bridge opening. Excessive scour, caused by the acceleration of water flow and developing vortices induced by obstruction to the flow, may endanger the structure around a pier or abutment. Velocity is a major factor considered during the design of a structure. General protective measures for velocity include using riprap for velocities below 10 feet per second (fps). Velocities between 10 and 14 fps require heavy riprap, and velocities above 14 fps require energy dissipation.

Floodplains within the project area are shown on [Figures 4.2.3-1](#) for the South Segment, [4.2.3-2](#) for the Central Segment and [4.2.3-3](#) for the North Segment. The floodplain impacts for each alternative in the regional (100-year) flood are discussed below.

The Wisconsin Administrative Code NR 116 recognizes that floodplain zoning is a necessary tool to protect human life, health, and to minimize property damages and economic losses. Counties, cities, and villages within the State of Wisconsin are required to adopt reasonable and effective floodplain zoning ordinances within their jurisdictions, and such ordinances are in place.

Federal regulations require that a finding of no practicable alternative be prepared for projects that result in significant floodplain encroachment. Significant floodplain encroachment would involve:

- Potential for interruption or termination of use of a transportation facility needed for emergency vehicles or which provides a community's only evacuation route.
- Probability of flooding with a potential for property loss and hazard to life.
- Adverse impact on natural floodplain values, such as flood storage, fish and wildlife habitat, open space, agriculture, natural beauty, or scientific areas.

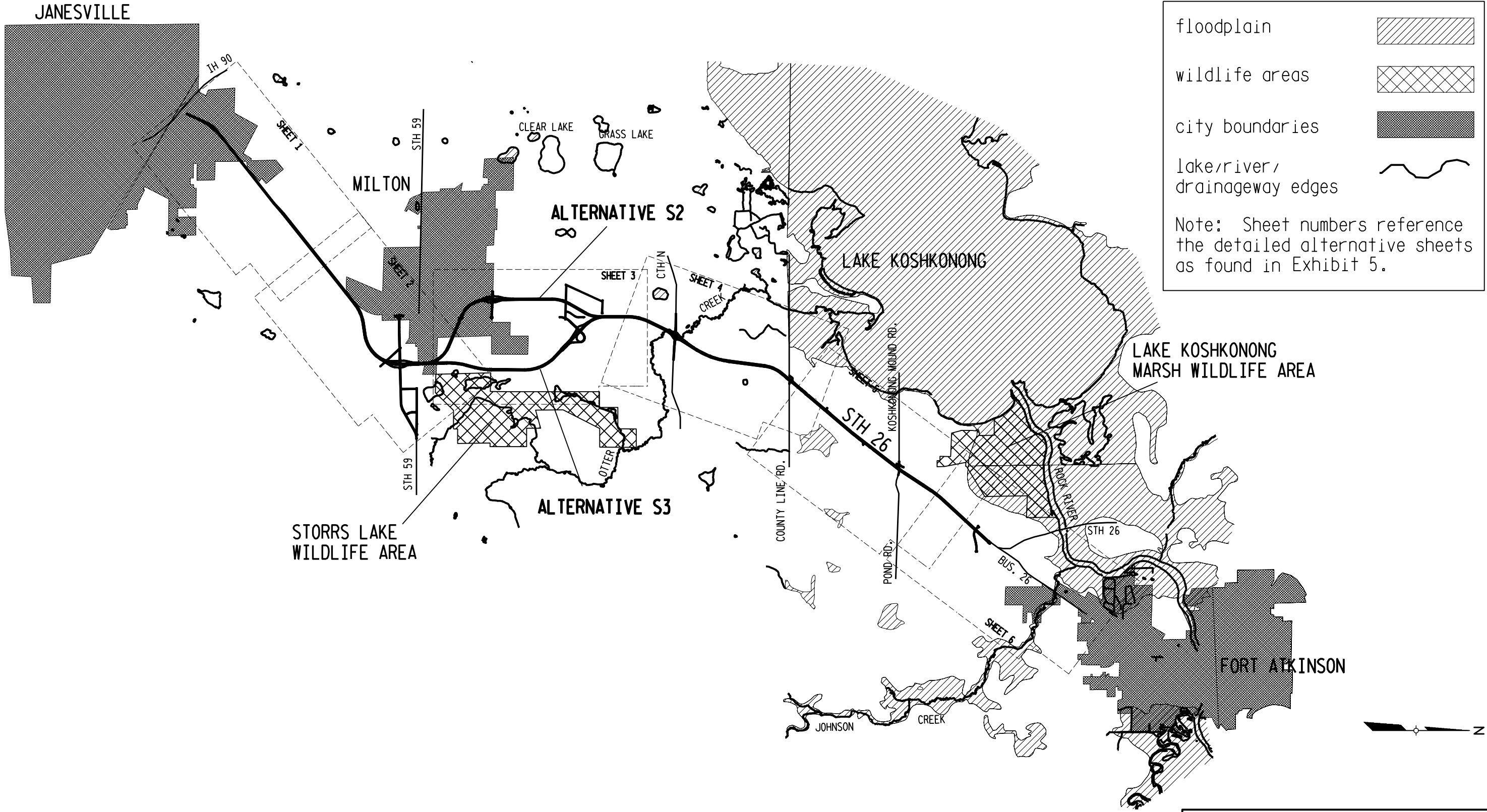
Highway projects can impact floodplains indirectly by facilitating or inducing development in floodplains. This project will not support incompatible floodplain development for several reasons:

- Expressway access control standards will be applied to the new facility where additional lanes are constructed adjacent to existing lanes. Access will be limited to existing residential and farm entrances, at controlled spacing, and low-volume local roads will be reconnected. Additional access will be prohibited or strictly limited. Freeway access control standards will be applied to the new facility where the route leaves the existing alignment, notably at the bypass locations around Milton, Jefferson and Watertown. In these instances, no access to the facility will be allowed except at controlled interchanges.

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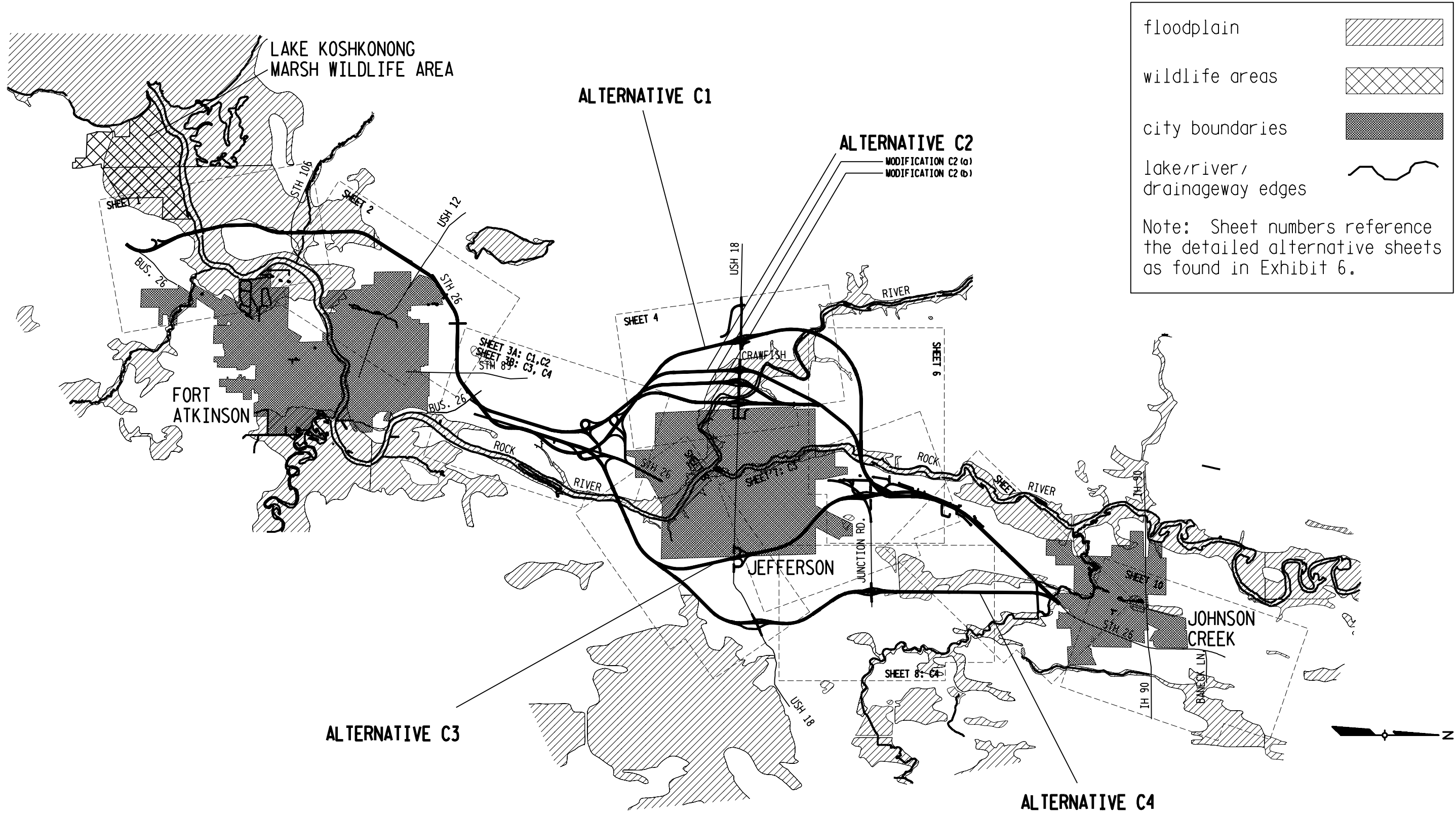
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STH 26 -- JANESVILLE TO WATERTOWN  
ROCK, JEFFERSON & DODGE COUNTIES

**FLOODPLAINS**  
CENTRAL SEGMENT

FIGURE 4.2.3-2

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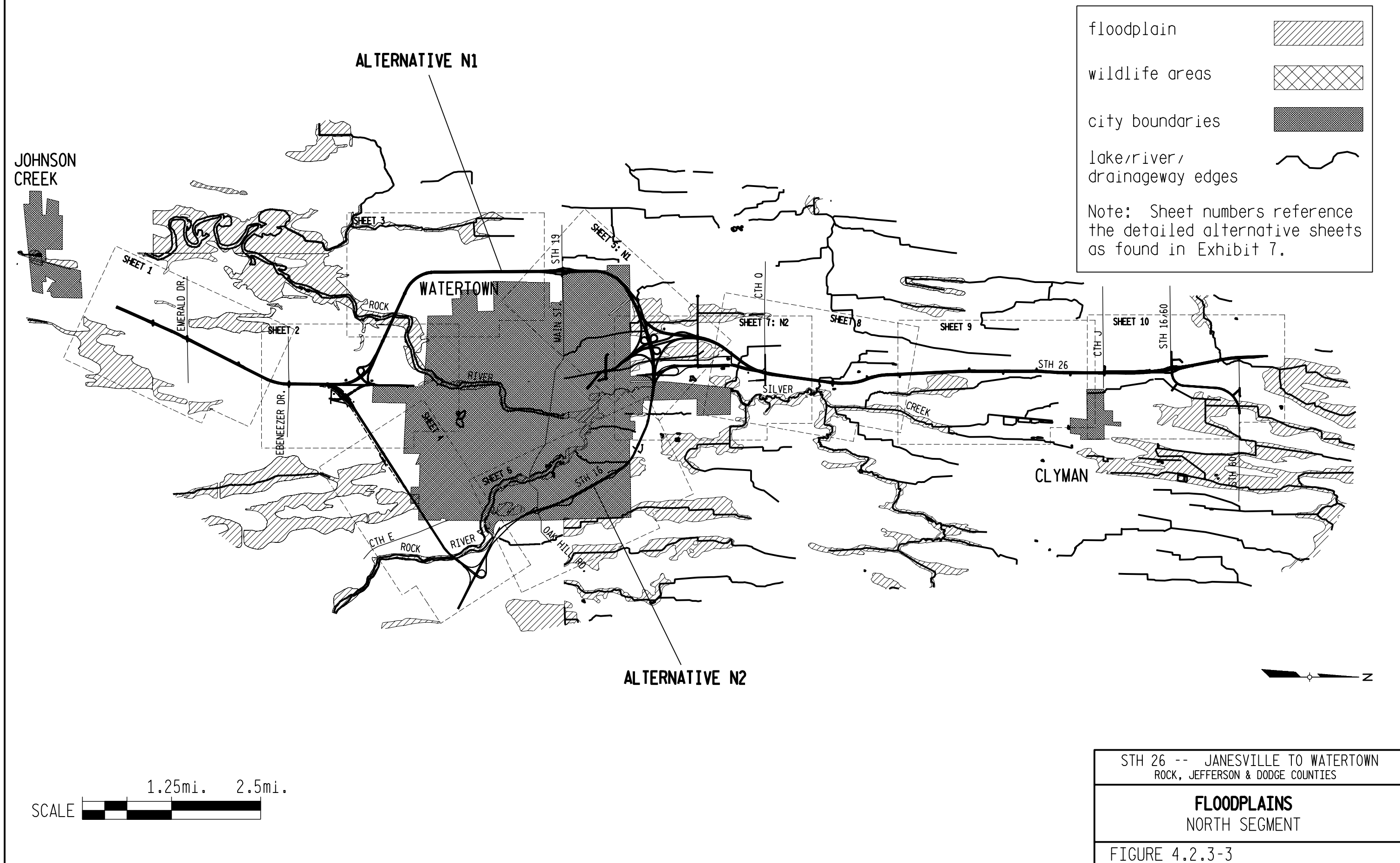
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- Rock, Jefferson, and Dodge Counties all have floodplain zoning ordinances that prohibit incompatible private development in the floodplain.
- Alternatives C2 and C2(a) would have an interchange with USH 18 that would be situated in the Crawfish River floodplain west of Jefferson. Although interchange locations are commonly subject to development pressure, the Jefferson County floodplain zoning ordinance would prohibit incompatible floodplain development associated with this interchange.

The remainder of this subsection concerns only direct floodplain impacts due to highway construction. Such floodplain encroachments can occur in two ways: transverse stream crossings and longitudinal encroachments into floodplain areas.

Transverse crossings occur when a stream is crossed and roadway construction in the floodplain is generally perpendicular to the stream flow. Longitudinal encroachment occurs when roadway construction in the floodplain is generally parallel to the stream flow. In either case, the additional fill required to raise, widen, or construct a new roadway can reduce the cross sectional area of the floodway necessary to convey the flow or can reduce the volume available for flood storage. Encroachments farther from the channel banks have little effect since the conveyance capacity in the distant floodplain is small compared to that of the main channel. In many cases, it may not be possible or practicable to replace the loss of flow area or storage volume, and the resulting encroachment will raise the floodwater surface profile, thereby causing inundation of areas that were previously outside the floodplain.

#### **4.2.3.1 No-Build Alternative**

The No-Build Alternative will not impact floodplains or affect natural and beneficial floodplain values. Because the No-Build Alternative does not involve an existing structure or encroachment, there are no adverse impacts to the floodplain. Under the No-Build Alternative, an alignment would not encroach into the floodway.

#### **4.2.3.2 Build Alternatives**

In the South Segment, none of the build alternatives will cross any regulated floodplain areas. Therefore, these alternatives will not impact floodplains or alter natural and beneficial floodplain values.

In the Central Segment, Alternatives C1, C2, and C2(a) would cross the Crawfish River west of Jefferson. Alternative C2(b) crosses the Crawfish River downstream of the existing USH 18 Crawfish River bridge and west of Jefferson. Crossings of the Rock River would occur north of Jefferson under Alternatives C1, C2, C2(a) and C2(b) and south of Jefferson under Alternatives C3 and C4. All six alternatives would cross Johnson Creek just south of the Village of Johnson Creek.

In the North Segment, crossings of the Rock River would occur southwest of Watertown under Alternative N1 and east of Watertown under Alternative N2. Alternative N1 would also cross a floodplain area north of Watertown.

Floodplain impacts are expected at the Alternative C2 and C2(a) crossings of the Crawfish River west of Jefferson. The Alternative C2(b) crossing of the Crawfish River would have no substantial impact to the floodplain. Under Alternative C2(b) the existing USH 18 river crossing would require reconstruction, which would impact the floodplain west of Jefferson. These impacts are discussed in detail below. At all



of the remaining Central and North Segment locations, stream crossing structures would be sized to avoid floodway impacts, reducing available volume for flood storage, and backwater increases upstream from the crossing locations; none of these crossings is expected to have floodplain impacts.

#### **4.2.3.3 Alternatives C2, C2(a) and C2(b)**

##### ***Floodplain Analysis***

Longitudinal encroachments are not a concern for Alternatives C2, C2(a) and C2(b). For all alternatives the new roadway would run parallel with the Crawfish River just downstream from USH 18. This area is outside of the floodway of the stream.

The Alternative C2, C2(a) and C2(b) transverse crossings of the Crawfish River could impact the floodplain. The Alternative C2 crossing at Mile Post 1.865 (approximately 2,400 feet upstream from USH 18; see [Figure 4.2.3.3](#)), the Alternative C2(a) crossing at Mile Post 1.66 (approximately 1,300 feet upstream from USH 18), and the Alternative C2(b) crossing at Mile Post 1.10 (approximately 1,600 feet downstream from USH 18) will consist of a new structure with ample freeboard (+20 feet). Near the

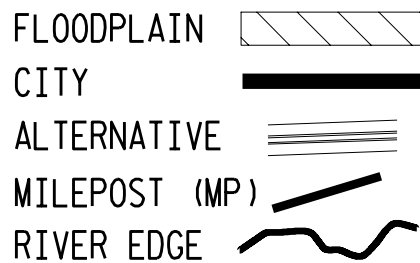
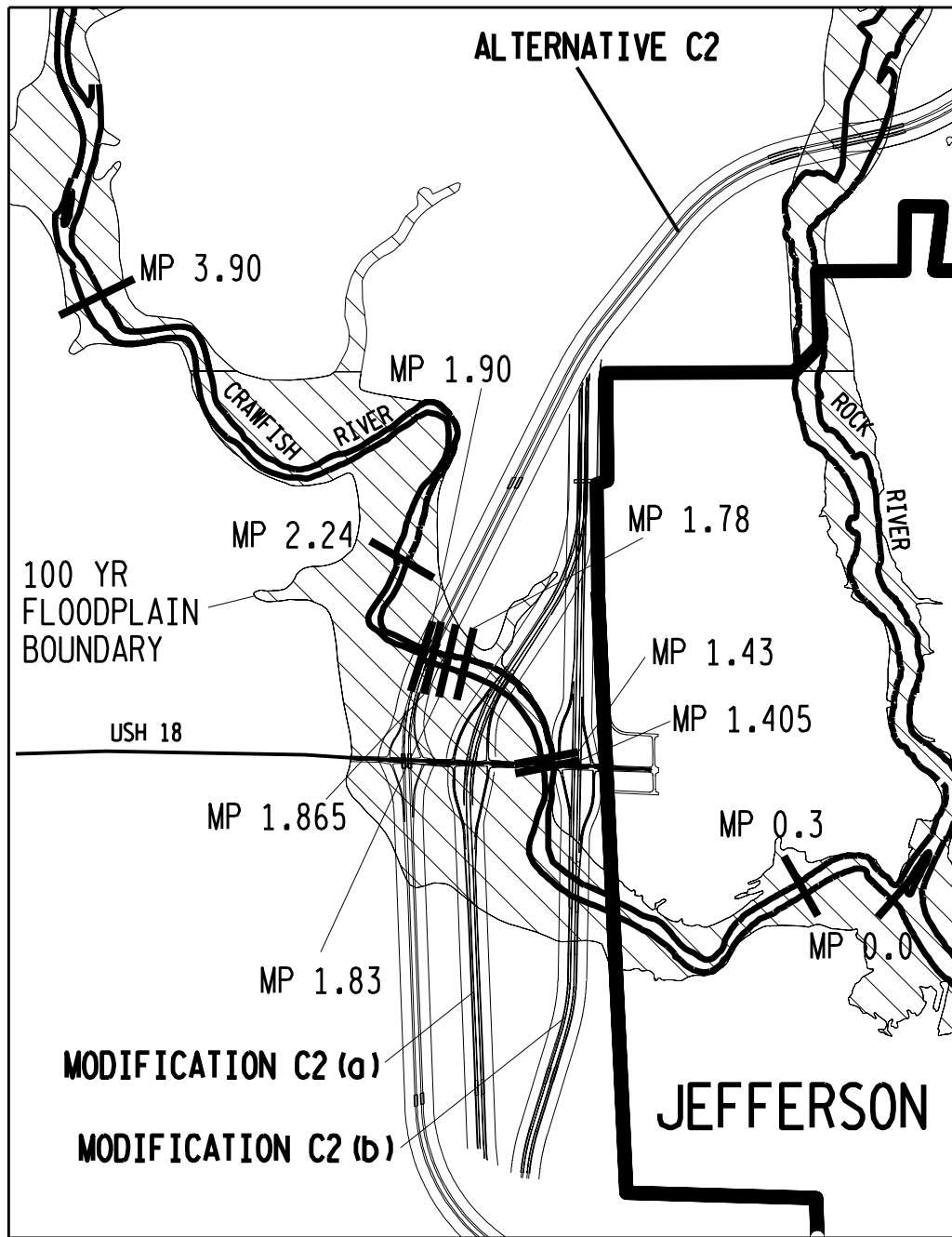
crossing location, Alternatives C2 and C2(a) would have an interchange with USH 18 that would be situated in the Crawfish River floodplain. This interchange would be located outside the floodway.

Alternative C2 over the Crawfish River was analyzed using the HEC-RAS computer model and hydraulic data obtained from the WDNR to determine the impacts on the regional flood elevation. The data used was from a Flood Insurance Study (FIS) for the Crawfish River in Jefferson County. Additional data was obtained from a 2-ft contour map to better approximate the floodplain geometry in the project area. The 100-year flow used in the analysis was taken from the October 16, 1984 FIS for Jefferson County.

The reconstruction of USH 18 over the Crawfish River, associated with Alternative C2(b), was also analyzed with HEC-RAS. The model used similar cross section data as the Alternative C2 analysis. A wider roadway with a raised profile was used to simulate proposed USH 18 reconstruction. Adjustments were made to cross-section input data because the proposed profile reduces the frequency of road overflow.

The results of the HEC-RAS analyses are presented in [Table 4.2.3.3](#). Alternative C2 with a 400-foot bridge spanning the entire floodway is expected to raise the 100-year flood height by about 0.08-foot (25-mm). It would not be possible or practicable to replace the loss of flow area or storage volume. To eliminate an increase would require a bridge spanning the entire width of the floodplain, which is not practical because of the high costs associated with constructing such a span. Findings for Alternative C2(a) were similar to those for Alternative C2. HEC-RAS results from reconstruction of USH 18 (Alternative C2(b)) with a 100 feet wide roadway and raised profile eliminated road overflow. The new configuration is expected to raise the 100-year flood height by about 0.04-foot (13-mm). Eliminating road overflow forced more conveyance in the main channel section and removed part of the right floodplain from the active flow area.





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ROCK, JEFFERSON & DODGE COUNTIES

HYDRAULIC CROSS SECTIONS  
CRAWFISH RIVER

FIGURE 4.2.3.3

<b>TABLE 4.2.3.3</b> <b>PREDICTED WATER SURFACE ELEVATIONS</b> <b>FOR THE REGIONAL FLOOD</b>					
<b>Hydraulic Cross Sections</b> <b>(1)</b> <b>(Mile Post)</b>	<b>Water Surface Elevation</b> <b>at Crawfish River</b> <b>(NVGD<sup>(2)</sup> ft.)</b>			<b>Elevation Difference</b> <b>(feet)</b>	
	<b>No-Build</b>	<b>C2 / C2(a)</b>	<b>C2(b)</b>	<b>C2 / C2(a)</b>	<b>C2(b)</b>
0.0	Rock River				
0.3	787.80	787.80	787.80	0.00	0.00
1.30	788.17	788.17	788.14	0.00	-0.03
1.405	USH 18				
1.43	788.27	788.27	788.22	0.00	-0.05
1.78	788.35	788.34	788.39	-0.01	0.04
1.83	788.36	788.35	788.40	-0.01	0.04
1.865	Alternative C2 Crossing (proposed STH 26)				
1.90	788.38	788.39	788.42	0.01	0.04
2.24	788.54	788.62	788.58	0.08	0.04
3.90	789.08	789.14	789.12	0.06	0.04

(1) See [Figure 4.2.3.3](#) for location of hydraulic cross sections.

(2) National Vertical Geodetic Datum

Due to the confluence with the Rock River and the flat water surface profile of the Crawfish River, a slight increase (< 0.1 foot) of the regional base flood elevation is expected to propagate upstream to IH 94 with Alternatives C2, C2(a), and C2(b). No habitable buildings or other structures would be inundated by the raised base flood elevation. The increase would be so minimal that it would not be possible to measure the newly inundated area from topographic maps. The newly inundated area consists primarily of farmland with some small wetland and woodlot areas.

Channel mean flow velocities in the impacted area range from about 2 to 3 feet per second in the regional (100-year) event. Because the Crawfish River is in the outwash plain of the Rock River, the water surface profile is relatively flat in the project area. The project is not expected to increase the potential for erosion during major, infrequent flooding events. In the area of greatest effect from Alternatives C2 and C2(a), the flow velocity will be increased from approximately 2.3 feet per second to 3.0 feet per second. Likewise the velocity is expected to increase from 1.8 feet per second to 2.6 feet per second as a result of the USH 18 reconstruction associated with Alternative C2(b). Effects on flood elevation and velocity are negligible downstream of project areas.

### ***Natural and Beneficial Floodplain Values***

The increase in the base flood elevation would have minor impacts on the natural and beneficial floodplain values. Habitat loss would occur primarily in the directly impacted wetlands associated with the floodplain. According to the WDNR Wisconsin Wetland Inventory maps, 90 percent of the wetlands along the Crawfish River upstream of the proposed crossing location consist of forested wetlands, which are less likely to be impacted by a small rise in the water level for a short duration. The remaining 10 percent of the wetlands are mapped as wet meadow wetlands, which are more susceptible to a rise in water levels. Since the probability of occurrence of this storm is once every 100 years and the duration of the high water levels is expected to be for a few days, this type of storm is not anticipated to impact upstream wetlands. Additional wetland impacts are discussed separately in Section 4.2.2.

The proposed crossing would have no effect on normal flows occurring within the stream banks, and a moderate effect on velocities in the floodway during major flooding events. Therefore, Alternatives C2, C2(a) and C2(b) would not substantially affect water quality protection, fisheries, vegetation, or recreational uses of the river.

### ***Agricultural Impacts of Flooding***

The impacts discussed above relate to the regulated floodplain, the area that is inundated by the 100-year flood. Adverse impacts can also occur due to changes in the depth or other characteristics of lesser magnitude floods that recur more frequently, with the principal concern being crop damage. Hydraulic analysis indicates that in the 10-year storm event (an event having a 10 percent probability of occurring in any given year), Alternatives C2 and C2(a) will raise the flood height of the Crawfish River by a maximum of approximately 0.04 foot (13 mm) compared to the No-Build Alternative. Alternative C2(b) will raise the flood height of the Crawfish River by a maximum of approximately 0.02 foot (6 mm) compared to the No-Build Alternative. The area of additional land that would be inundated under any of the build alternatives is insubstantial and would consist mostly of hillside at the fringes of the cropland.

Crop loss can result from several conditions, including:

- Soil that is too wet to plant during normal planting time.
- Soil that is saturated in the root zone for an extended period of time, normally more than two weeks, during any point in the growing cycle.
- Scour caused by surface water flow at high velocities, especially when plants are young.

The first two conditions relate to movement of water within the soil rather than to surface flooding events. Alternatives C2, C2(a) and C2(b) would not substantially change these conditions. **None of these alternatives** would affect the frequency of overbank flooding, which typically has a recurrence interval of less than two years. Alternative C2(b) would raise the profile of USH 18 while widening the USH 18 bridge over the Crawfish River and would not affect the floodway of the Crawfish River. Alternatives C2, C2(a), and C2(b) would have negligible effect on the duration that surface water remains standing as backwater effects starting downstream at the Rock River control this almost entirely.

Alternatives C2, C2(a) and C2(b) will slightly increase the depth and velocity of flow during overbank flood events on the Crawfish River. Scour conditions normally occur in localized areas just downstream of the locations where stream banks are first breached. These scour channels are frequently associated with high-velocity, short-duration flash floods on sub-drainage basins, rather than flooding on the main stem itself. The project will have negligible effect on the peak flows or response times for the Crawfish River or its major tributaries.

### ***Agency Coordination***

Coordination with WDNR, FEMA, and the U.S. Army COE has been initiated to solicit their comments and to inform these regulatory agencies that if Alternative C2, C2(a) or C2(b) is chosen as the Preferred Alternative, the proposed improvement may require revision of official floodplain maps and zoning ordinances. **Alternative C2(a) has since been chosen as the Preferred Alternative, and further coordination**

with these agencies will occur. This action would be in conformance with state and local floodplain standards provided that:

- Hydraulic calculations are completed and affected property owners are compensated in accordance with the WisDOT/WDNR Cooperative Agreement as amended in 1988.
- Amendments are made to the official floodplain maps and Jefferson County's floodplain zoning ordinance.

The change in the regional flood elevation would not result in substantial changes to floodplain maps due to the minimal increase. The location of the floodplain may differ after new topography is generated for this project.

#### **4.2.4 Groundwater and Drinking Water Supply**

The proposed highway alternatives are not anticipated to adversely impact groundwater or drinking water resources. Well construction reports from representative locations in the project area indicate that area drinking water aquifers are at depths that will not be affected by the project. According to the USEPA, no sole-source aquifers have been designated in the State of Wisconsin.

#### **4.2.5 Upland Habitat and Wildlife**

##### **4.2.5.1 General**

Direct impacts to upland habitats may occur in two ways: loss of habitat by converting it to roadway and habitat fragmentation from constructing the roadway through an existing habitat. Converting habitat to roadway would result in a direct loss of food and cover for species utilizing the habitat. Fragmentation of habitat reduces the size of individual wooded areas, thereby decreasing the "habitat island" size. When this happens, there is an increase in edge area relative to interior area. Edge species, which are more tolerant of changing and varied conditions, may replace interior species in small wooded areas. The result is that small wooded areas are not representative of the original wooded habitat. Where the build alternative will only impact the edge of the wooded area, significant fragmentation of habitat will not occur.

Relative to larger areas of a particular habitat, small habitat patches are less likely to contain the full range of resources to support a given species. Additionally, a small habitat patch will contain a lesser absolute amount of a given resource available to individuals of species. For these two reasons, a small habitat patch is likely to support a smaller number of species and smaller populations of a given species relative to a large habitat patch.

##### **4.2.5.2 South Segment**

As shown in [Table 4.2.5.2](#), Alternatives S2 and S3 would impact the same three upland wooded areas north of the City of Milton and would total approximately 4.5 acres (1.8 ha) of upland wooded habitat impacted. All three impacts would be fringe impacts with no fragmentation of existing habitat. See [Exhibit 5](#) for location of impacted wooded areas.

TABLE 4.2.5.2 SOUTH SEGMENT UPLAND WOODED HABITAT IMPACTS					
Wooded Habitat ID	Station No.	Habitat Type (Southern Hardwoods)	Approximate Area Impacted		Type of Impact
			Acres	Hectares	
Alternatives S2 and S3					
F-1	650	Dry-Mesic	2	0.8	Fringe
F-2	680	Dry-Mesic	2.2	0.9	Fringe
F-3	710	Dry	0.3	0.1	Fringe
		Total	4.5	1.8	

Alternative S3 was selected as the Preferred Alternative. Minor alignment shifts were made to further minimize overall environmental impacts. This alternative will affect the same three woodlands as Alternative S3 as it was presented in the DEIS, with an additional 0.3 ac (0.1 ha) at woodland F-2. The total upland woods impact for the Preferred Alternative is 4.8 ac (1.9 ha).

#### 4.2.5.3 Central Segment

As shown in [Table 4.2.5.3](#), Alternative C1 would result in approximately 12 acres (4.8 ha) of upland wooded area impacts. Alternative C2 would result in approximately 9 acres (3.6 ha) of upland wooded area impacts. Modifications of C2, referred to as C2(a) and C2(b), would impact 8 acres (3.2 ha) and 9 acres (3.6 ha), respectively. Alternative C3 would result in approximately 2 acres (0.9 ha) of upland wooded area impacted, and Alternative C4 would result in 10.5 acres (4.3 ha) of upland wooded area impacts. Alternatives C2 and C4 would result in one severance of upland wooded habitat, causing fragmentation of habitat. See [Exhibit 6](#) for location of impacted wooded areas.

TABLE 4.2.5.3 CENTRAL SEGMENT UPLAND WOODED HABITAT IMPACTS					
Wooded Habitat ID	Station No.	Habitat Type (Southern Hardwoods)	Approximate Area Impacted		Type of Impact
			Acres	Hectares	
Alternative C1					
F-4	360	Mesic	1	0.4	Fringe
F-6	510	Dry-Mesic	4	1.6	Fringe
F-8	460	Dry	4	1.6	Fringe
F-10	720	Mesic	3	1.2	Fringe
		Total	12	4.8	

**TABLE 4.2.5.3  
CENTRAL SEGMENT UPLAND WOODED HABITAT IMPACTS**

Alternative C2					
F-5*	420	Mesic	1	0.4	Severance
F-7	530	Mesic	1	0.4	Fringe
F-8*	480	Dry	4	1.6	Fringe
F-10*	690	Mesic	3	1.2	Fringe
		Total	9	3.6	
*Modification C2(a) would impact these woodlands for a total impact of 8 acres (3.2 ha).					
*Modification C2(b) would impact these woodlands in addition to F-25 (1 acre; 0.4 ha) for a total impact of 9 acres (3.6 ha).					
Alternative C3					
F-9	670	Dry-Mesic	1	0.4	Fringe
F-16	495	Dry-Mesic	0.3	0.1	Fringe
F-17	518	Dry-Mesic	0.7	0.3	Fringe
F-18	604	Dry-Mesic	0.1	0.1	Fringe
		Total	2	0.9	
Alternative C4					
F-16	495	Dry-Mesic	0.3	0.1	Fringe
F-17	518	Dry-Mesic	0.7	0.3	Fringe
F-19	565	Dry-Mesic	0.6	0.2	Fringe
F-20	610	Dry-Mesic	1.4	0.6	Whole
F-21	623	Dry-Mesic	3.7	1.5	Severance
F-22	810	Dry-Mesic	3.8	1.6	Whole
		Total	10.5	4.3	

Alternative C2(a) was selected as the Preferred Alternative. Minor alignment shifts were made to further minimize overall environmental impacts. This alternative will affect woodlands F-4 and F-10. The total upland woods impact for the Preferred Alternative is 4.0 ac (1.6 ha).

#### 4.2.5.4 North Segment

As shown in [Table 4.2.5.4](#), Alternative N1 would result in approximately 7 acres (2.8 ha) of upland wooded area impacts. The area impacted by the Alternative N1 would be on the fringe, with no fragmentation of habitat. Alternative N2 would result in approximately 23 acres (9.2 ha) of upland wooded area impacts. The Alternative N2 impacts are all severances and would cause habitat fragmentation at the five wooded areas impacted. See [Exhibit 7](#) for location of impacted wooded areas.

Alternative N1 was selected as the Preferred Alternative. Minor alignment shifts were made to further minimize overall environmental impacts. This alternative will affect the same woodland as Alternative N1 as it was presented in the DEIS, with a total upland woods impact 7.0 ac (2.8 ha).

**TABLE 4.2.5.4**  
**NORTH SEGMENT UPLAND WOODED AREA IMPACTS**

Wooded Habitat ID	Station No.	Habitat Type (Southern Hardwoods)	Approximate Area Impacted		Type of Impact
			Acres	Hectares	
Alternative N1					
F-14	370	Dry-Mesic	7	2.8	Fringe
Alternative N2					
F-11	290	Dry	4.3	1.7	Severance
F-12	330	Mesic	1.8	0.7	Severance
F-13	360	Dry-Mesic	5.4	2.2	Severance
F-23	256	Dry-Mesic	10.2	4.1	Severance
F-24	456	Dry-Mesic	1.3	0.5	Severance
		Total	23	9.2	

#### 4.2.6 Threatened and Endangered Species

No federally listed threatened or endangered species are impacted by the build alternatives. As discussed in Section 3.3.7, a federally listed threatened species, the eastern prairie fringed orchid, occurs near the project area west of Alternatives S2 and S3. A field survey in 1999 indicated that these alternatives would not directly impact this species. No indirect impacts are anticipated. Prior to construction, a follow-up field survey will be conducted to confirm that this species is not present within the construction limits. During construction, efforts will be made to avoid impeding the natural subsurface drainage near Otter Creek.

Records on file with the Wisconsin Department of Natural Resources Bureau of Endangered Resources (BER) indicate that 34 species that may occur within the project area possess the status of state endangered, threatened, or special concern.

An endangered species is defined as being in danger of extinction or extirpation from the state throughout all or a significant portion of its range. A threatened species is defined as being likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Special concern species are species about which some problem of abundance or distribution is suspected, but not proven. The main purpose of this designation is to focus attention on certain species before they become threatened or endangered. Special concern species are not protected under Chapter 27 of the Wisconsin Administrative Code, Endangered and Threatened Species. The following paragraphs summarize the potential for species identified by the BER to be affected by the proposed alternatives. [Table 4.2.6](#) summarizes the potential direct and indirect impacts to the species' preferred habitats.

The preferred habitat for many of the plant species of concern, as listed in [Table 3.3.7-1](#), is dry, sandy prairies. No impacts to dry prairies are expected along any of the alternatives. Several other species prefer wet or wet-mesic prairies or sedge meadows, such as the prairie Indian plantain (*Cacalia tuberosa*), the marsh blazing star (*Liatris spicata*), the downy willow herb (*Epilobium strictum*), the tubercled orchid (*Platanthera flava herbiola*), and the prairie white-fringed orchid (*Platanthera leucophaea*). There is potential for this habitat to be impacted by the two East Jefferson Bypasses and the Near West Jefferson Bypass Alternatives.



**TABLE 4.2.6**  
**POTENTIAL IMPACTS TO HABITAT OF THREATENED AND ENDANGERED SPECIES FOR WHICH RECENT OR HISTORICAL RECORDS EXIST**

Species	State Status	Alternatives						
		South Segment S2 and S3	Central Segment				North Segment	
			C1	C2*	C3	C4	N1	N2
<b>Plants</b>								
Pale purple coneflower ( <i>Echinacea pallida</i> )	T	D	D	D	D	D	D	D
Prairie parsley ( <i>Polytania nuttallii</i> )	T	D	--	D	D	D	D	--
Sycamore ( <i>Platanus occidentalis</i> )	SC	D	D	D	--	D	D	D
Rough white lettuce ( <i>Prenanthes aspera</i> )	E	--	--	--	--	--	--	--
Prairie dandelion ( <i>Nothocalius cuspidata</i> )	SC	--	--	--	--	--	--	--
Prairie bush clover ( <i>Lespedeza leptostachya</i> )	T	--	--	--	--	--	--	--
Prairie thistle ( <i>Cirsium hillii</i> )	T	D	--	D	D	D	--	--
Meadow parsnip ( <i>Thaspium trifoliatum</i> )	SC	--	D	D	--	D	--	--
Pink milkwort ( <i>Polygala incarnata</i> )	E	--	--	--	--	--	--	--
Marsh horsetail ( <i>Equisetum palustre</i> )	SC	D,I	D,I	D,I	D,I	D,I	D,I	D,I
Richardson sedge ( <i>Carex richardsonii</i> )	SC	--	--	--	--	--	--	--
Prairie white-fringed orchid ( <i>Platanthera leucophaea</i> )	T	D,I	--	D,I	D,I	D,I	--	--
White ladies slipper ( <i>Cypripedium candidum</i> )	T	--	--	--	--	--	--	--
Prairie Indian plantain ( <i>Cacalia tuberosa</i> )	T	D	--	D	D	D	--	--
Marsh blazing star ( <i>Liatis spicata</i> )	SC	--	--	D,I	D,I	D,I	--	--
Downy willow herb ( <i>Epilobium strictum</i> )	SC	--	--	D,I	D,I	D,I	--	--
Tuberclad orchid ( <i>Platanthera flava herbicola</i> )	T	--	--	D,I	D,I	D,I	--	--
American gromwell ( <i>Lithospermum latifolium</i> )	SC	--	--	--	--	--	--	--
Prairie milkweed ( <i>Asclepias sullivantii</i> )	T	--	--	--	--	--	--	--
Prairie sagewort ( <i>Artemisia frigida</i> )	SC	--	--	--	--	--	--	--
<b>Fish</b>								
Redfin shiner ( <i>Lithurus umbratilis</i> )	T	--	D	D	D	D	D	D
American eel ( <i>Anguilla rostrata</i> )	SC	--	D	D	D	D	D	D
Least darter ( <i>Etheostoma microperca</i> )	SC	--	--	--	--	--	--	--
Pugnose minnow ( <i>Notropis emiliae</i> )	SC	--	D	D	D	D	D	D
Weed shiner ( <i>Notropis texanus</i> )	SC	--	D	D	D	D	D	D
Slender madtom ( <i>Noturus exilis</i> )	E	D	D	D	D	D	--	--
Greater redhorse ( <i>Moxostoma valenciennesi</i> )	T	--	D	D	D	D	D	D
River redhorse ( <i>Moxostoma carinatum</i> )	T	--	D	D	D	D	D	D
<b>Herptiles</b>								
Blanding's turtle ( <i>Emydoidea blandingii</i> )	T	D,I	D,I	D,I	D,I	D,I	D,I	D,I
Queen snake ( <i>Regina septemvittata</i> )	E	D	--	--	--	--	--	--
Blanchard's cricket frog ( <i>Acris crepitans blanchardi</i> )	E	--	D,I	D,I	D,I	D,I	D,I	D,I
<b>Mammals</b>								
Franklin's ground squirrel ( <i>Spermophilus franklinii</i> )	SC	D	D	D	D	D	D	D
Prairie vole ( <i>Microtus ochrogaster</i> )	SC	--	--	--	--	--	--	--
<b>Birds</b>								
Black-crowned night heron ( <i>Nycticorax nycticorax</i> )	SC	--	--	--	--	D	--	D
NOTES:								
Status: T = Threatened E = Endangered SC = Special Concern D = Potential Direct Impacts I = Potential Indirect Impacts								
*Alternatives C2(a) and C2(b) would have similar impacts as compared to Alternative C2.								

Of the eight fish species on the list, all but the least darter (*Etheostoma microperca*) have the potential for impacts to their habitat at the Rock and Crawfish River crossing locations of all the Jefferson Bypass Alternatives, including the Fort Atkinson Bypass, and the two Watertown Bypass Alternatives.

The preferred habitat of the Blanding's turtle (*Emydoidea blandingii*) will be potentially impacted by all the alternatives, while the Blanchard's cricket frog's (*Acris crepitans blanchardi*) preferred habitat will potentially be impacted by all four Jefferson Bypass Alternatives, including the Fort Atkinson Bypass, and both of the Watertown Bypass Alternatives. At the Otter Creek crossing location, both Milton Bypass Alternatives will potentially impact the preferred habitat of the queen snake (*Regina septemvittata*).

The preferred habitat of the Franklin's ground squirrel (*Spermophilus franklinii*), brushy and partly wooded areas, dense grassy, shrubby marshland and prairie edges, will potentially be impacted by all the alternatives. The preferred habitat of the prairie vole (*Microtus ochrogaster*), dry and sandy prairies, is not anticipated to be impacted by any of the alternatives.

The preferred habitat of the black-crowned night heron (*Nycticorax nycticorax*), wetlands dominated by bulrush and cattail with small groves of brush, may potentially be impacted by the Far East Jefferson Bypass Alternative and the East Watertown Bypass Alternative.

During a field reconnaissance, none of the listed species was identified. Signs indicating the presence of the species were not observed, although it should be noted that a comprehensive search was not performed. Detailed field investigations will be conducted during future design projects along preferred alternative when it is identified. If it is determined that, through unforeseen circumstance impacts will occur to threatened or endangered species or their habitat, WisDOT will coordinate with WDNR to evaluate appropriate avoidance or mitigative measures.

#### **4.2.7 Natural and Conservancy Areas**

Several of the natural plant communities in the project area discussed in Section 3.3.8 are potentially impacted by one or more of the build alternatives. Impacts relating to these areas are discussed below.

##### **4.2.7.1 South Segment**

Existing STH 26 crosses a natural plant community along Otter Creek and Otter Creek Springs. The No-Build Alternative would have no impacts on the beneficial values of these areas.

Both Alternatives S2 and S3 would cross Otter Creek and impact the community. At least one additional crossing would be required to construct the additional two-lanes of roadway. An interchange is also proposed at STH 26 and CTH N. Some of the ramps for the interchange may also require a crossing of Otter Creek, and the entire Otter Creek Springs area would be converted to highway use.

Based on comments received from agencies on the DEIS, the Preferred Alternative S3 was shifted approximately 2,000 feet to the east to avoid crossing the Otter Creek natural plant community. This alignment shift results in STH 26 crossing Otter Creek outside of the natural community and avoids impacts to Otter Creek at the proposed STH 26 and CTH N interchange. See [Exhibit 8](#) for a map of the Preferred Alternative S3.

##### **4.2.7.2 Central Segment**

Existing STH 26 crosses a natural plant community along the Rock River on the Fort Atkinson Bypass and travels adjacent to the Jefferson Railroad Prairie. The No-Build Alternative would have no impacts on the beneficial values of the community.

All Central Segment build alternatives would cross the natural plant community along the Rock River at the current STH 26 crossing on the Fort Atkinson Bypass. Either one additional bridge next to the existing one or a widening of the existing bridge would be required. Impacts to this area would potentially include the construction of a bridge pier in the Rock River. Alternatives C1, C2, C2(a), and C2(b) would also cross the Rock River on the north side of Jefferson.

Jefferson Railroad Prairie would have been potentially impacted by all Central Segment build alternatives presented in the DEIS. Approximately 0.5 acres (0.2 ha) of this 12-acre (4.9 ha) area would have been converted to highway use. If it is determined that no area is required for highway use, all build alternatives would parallel this community for approximately one mile (1.6 km). The Preferred Alternative C2(a) as modified from the DEIS avoids this area completely.

#### **4.2.7.3 North Segment**

Existing STH 26 crosses the natural plant community along the Rock River in the City of Watertown. The No-Build Alternative would have no impacts on the beneficial values of the natural community.

All North Segment build alternatives would require a new crossing of the natural plant community along the Rock River either southwest of Watertown along Alternative N1 or southeast of Watertown along Alternative N2. Impacts to this area would potentially include the construction of a bridge pier in the Rock River.

#### **4.2.8 Section 4(f) and Section 6(f) Impacts**

Section 4(f) of the US Department of Transportation Act (49 USC 303) states that federal funds may not be approved for projects that use land from a publicly-owned park, recreation area, wildlife and waterfowl refuge, or historical site unless determination is made that there is no feasible and prudent alternative to the use of land from such properties, and the action includes all possible planning to minimize harm to the property resulting from such use.

For purposes of Section 4(f), only historic properties or sites that are on, or determined to be eligible for inclusion on the National Register of Historic Places (NRHP) are considered historic. Section 4(f) requirements may be applicable to certain archaeological sites. Section 4(f) does not apply if it is determined, in consultation with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP), that the archaeological resource is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place.

Section 6(f) of the Land and Water Conservation Fund (LAWCON) Act requires that replacement lands be provided for National Park lands, or lands acquired with LAWCON funds, which are converted to highway use.

None of the alternatives carried forward for detailed study require use of land from Section 4(f) or 6(f) protected resources as discussed below.

This section discusses the applicability of Section 4(f) and Section 6(f) requirements to public use lands and historic properties within the study area. Each public use land or historic site is described as being impacted or not impacted under the proposed detailed study alternatives. [Tables 4.2.8.1, 4.2.8.2, and 4.2.8.3](#) provide a summary of the potential 4(f) impacts in the study area. A detailed description and map of public use lands in the study area is provided in Section 3.3.9.

**Snowmobile Trails** - The counties and private snowmobile clubs maintain a system of snowmobile trails throughout Rock, Jefferson, and Dodge Counties. Trails are maintained with snowmobile registration fees administered by the WDNR. The trails are leased from private property owners on a one-year basis. Occupancy of STH 26 right-of-way to cross the roadway is permitted under Chapter 350 of the Wisconsin Statutes. The requirements of Section 4(f) do not apply to the trails since they are not publicly owned and occupy private lands on a temporary easement basis. The continuity of trails and crossing points will be maintained under the STH 26 alternatives to the extent reasonably possible.

#### **4.2.8.1 South Segment**

**Ice Age National Scenic Trail** – A section of the trail is in the planning stages along an abandoned railroad corridor located west of STH 26 between Janesville and Milton. WisDOT owns much of the abandoned railroad corridor, with the remainder in private ownership. This project includes plans for one trail crossing of STH 26 outside of the abandoned railroad corridor.

The proposed crossing is at Storrs Lake Road within the City of Milton (see Exhibit 5, sheet 2). The Ice Age Trail is in the early planning stages at this location. It is proposed to link the City of Milton residents to the Milton House and the Storrs Lake Wildlife Area, both popular destinations, with a trail along Storrs Lake Road within public right-of-way. Both Alternatives S2 and S3 provide an overpass crossing that would carry STH 26 over the top of Storrs Lake Road and the proposed Ice Age Trail. A sidewalk will be provided along Storrs Lake Road at the structure crossing of STH 26 to accommodate pedestrian usage of the planned Ice Age Trail. The sidewalk would be located along one side of Storrs Lake Road, and would simply occupy the rights-of-way of Storrs Lake Road. Any slight adjustment in the roadway alignment due to a STH 26 overpass would not impair the continuity of the planned trail. Therefore, Section 4(f) requirements are not applicable at this location.

**Storrs Lake Wildlife Area** – This wildlife area, located east of Milton, is not impacted by any of the current study alternatives in the South Segment. Since this area is not classified as a wildlife refuge, Section 4(f) requirements would not apply.

**Crossridge Park** – This city park, located in southern Milton west of STH 26, is adjacent to both South Segment alternatives. No acquisition of parkland is anticipated; therefore, Section 4(f) requirements would not apply.

**STH 26 Wayside** – This state-owned wayside, located in the northeast quadrant of STH 26 and Vickerman Road north of Milton, is anticipated to be impacted under both South Segment study alternatives. Since this property is not recreational land, Section 4(f) requirements would not apply.

**Lake Koshkonong Marsh Wildlife Area** – This state-owned wildlife area, located 0.5 mile (0.8 km) west of STH 26 between Lake Koshkonong and Fort Atkinson, is not impacted under any of the current study alternatives. Since this area is not classified as a wildlife refuge, Section 4(f) requirements would not apply.

**County Glacial River Recreation Trail** – This Jefferson County trail is located within an abandoned railroad corridor adjacent to the west side of STH 26 from the Rock-Jefferson County Line north to the City of Ft. Atkinson. In order to minimize impact to wetland area W3 on the east side of existing STH 26, Alternatives S2 and S3 will require that approximately 1000 feet (300 m) of this trail at the southern terminus be adjusted within the existing trail corridor. The Wisconsin Department of Transportation owns

the 100-foot (30 m) rail corridor at this location. Jefferson County has a 25-year lease on the corridor for their transportation trail. The recorded lease agreement states in part, “It is expressly provided and agreed by the parties hereto that if the LESSOR (WisDOT) determine that it is necessary to construct additional highway improvements, said LESSOR may partially, or if necessary, completely terminate this AGREEMENT upon 90 days written notice to the LESSEE (Jefferson County).” Since the County Glacial River Recreation Trail simply occupies the rights of way owned by the Wisconsin Department of Transportation, and is not limited to any specific location within that right of way, a “use” of land would not occur and Section 4(f) requirements would not apply. A minor adjustment in the alignment of the trail of about 40 feet (12 m) would be required, and the trail would remain within the existing 100-foot (30 m) abandoned railroad corridor. The change in the alignment of the trail would not impair the continuity of the trail.

<b>TABLE 4.2.8.1</b> <b>SECTION 4(f) IMPACTS</b> <b>SOUTH SEGMENT – JANESVILLE TO FORT ATKINSON</b>			
Site Name	4(f) Impact Under Alternative:		Remarks
	S2	S3	
Ice Age National Scenic Trail (Rotamer Road crossing)	NO	NO	STH 26 Right of Way exists. No land acquisition anticipated.
Ice Age National Scenic Trail (Storrs Lake Road crossing)	NO	NO	Planned trail to occupy the rights of way of Storrs Lake Road
Storrs Lake Wildlife Area	NO	NO	Not a wildlife refuge. No land acquisition anticipated.
Crossridge Park	NO	NO	No park land acquisition anticipated
STH 26 Wayside	NO	NO	Non-recreational use
Lake Koshkonong Marsh Wildlife Area	NO	NO	Not a wildlife refuge. No land acquisition anticipated.
County Glacial River Recreation Trail	NO	NO	Trail occupies highway right of way. Continuity of trail will not be impaired.

#### 4.2.8.2 Central Segment

County Glacial River Recreation Trail – The northern section of this trail travels on paved paths and local roads near the Business 26 interchange south of Fort Atkinson. The trail currently passes under STH 26 on Groeler Road. STH 26 would cross Groeler Road at the same location with the addition of two lanes to the existing two lanes. The trail will not be impacted under any Central Segment study alternatives. Since the trail is currently within STH 26 right-of-way and on a local road, Section 4(f) requirements would not apply.

Glacial Drumlin Trail – This 47 mile (75 km) state-owned trail is located between the Village of Cottage Grove in Dane County and the City of Waukesha in Waukesha County on an abandoned railroad grade. LAWCON funds (Project 55-01626) were used to develop the trail, which meets 6(f) requirements. A 4-mile (6.4-km) gap in this east-west trail is located north of the City of Jefferson from the east side of STH 26 to Switzke Road. Switzke Road is located about 4 miles (6.4 km) east of STH 26. There are no